ADDISON WESLEY

Ontario

Math Makes Sense

1

Ontario 2005

Curriculum Companion

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PEARSON Education Canada

Using Your Curriculum Companion

Addison Wesley Mathematics Makes Sense is comprehensive program designed to support teachers in delivering core mathematics instruction in a way that makes mathematical concepts accessible to all students – letting you teach for conceptual understanding, and helping students make sense of the mathematics they learn. ***Addison Wesley Mathematics Makes Sense*** was specifically written to provide 100% curriculum coverage for Ontario teachers and students. The ***Math Makes Sense*** development team wrote, reviewed, and field tested materials according to the requirements of The Ontario Curriculum, Mathematics, released in 1997. Now, with Ontario's initiative or Sustaining Quality Curriculum, the same development team is pleased to provide further support in this **Curriculum Companion**.

Your Curriculum Companion provides you with the specific support you need to maintain 100% curriculum coverage according to the revised 2005 release of The Ontario Curriculum. In this module, you will find:

What's New at Grade 1?
This one-page overview provides your year-at-a-glance, with notes detailing where new curriculum requirements have arisen in the 2005 curriculum.

Unit Planning Charts
For each unit, a one-page overview recommends required or optional lessons, and indicates whether this module provides additional teaching support to ensure curriculum coverage.

Curriculum Focus Notes
The revised curriculum introduced some new expectations that already form part of the overall conceptual framework on which your Grade 1 program was built. In order to meet these expectations in a more explicit way, **Curriculum Focus Notes** suggest ways that you might use the ***Math Makes Sense 1*** Student Book lesson content to address the expectations. If relevant, the suggestion includes use of an **Extra Practice** master, available in reproducible form following the teaching notes.

Curriculum Focus Notes follow in sequence, where relevant, after the **Unit Planning Chart**.

Reproducible Masters, with Answers
You will find reproducible masters provided for any expectation that requires such additional support. Answers for masters are provided with the teaching notes.

Curriculum Correlation
Go to page 27 to find detailed curriculum correlation that demonstrates where each expectation from your Grade 1 curriculum is addressed in ***Addison Wesley Math Makes Sense 1***.

What's New at Grade 1?

Unit	Curriculum Focus Notes	Curriculum Focus Masters
1	Lesson 3: Recognize and Copy a Pattern	
	Lesson 4: Make and Extend a Pattern	Line Master 11
2	Lesson 8: Represent Numbers 10 to 20	
3	Lesson 4: Time to the Hour	Line Master 12
6	Lesson 4: Spatial Awareness	
7	Lesson 2: Counting Collections	
8	Lesson 4: Choosing a Unit	Line Master 13
9	Lesson 7: Time to the Half-Hour	Line Master 18
11	Lesson 4: Comparing Mass	

Unit 1 Sorting and Patterning

Lesson	Curriculum Coverage	Line Masters and Materials
Lesson 1: Same and Different	Required	
Lesson 2: Identify Attributes	Required	
Lesson 3: Recognize and Copy a Pattern	Required: See Focus Note 1.3	
Lesson 4: Make and Extend a Pattern	Required: See Focus Note 1.4	Line Master 11
Lesson 5: Strategies Tool Kit	Required	
Lesson 6: Show What You Know	Required	

Lesson 3: Recognize and Copy a Pattern

Focus Note 1.3

Curriculum expectation: Identify and extend, through investigation, numeric repeating patterns (e.g., 1, 2, 3, 1, 2, 3, 1, 2, 3, …).

Curriculum Focus

Your curriculum requires children to identify and extend numeric repeating patterns.

Extend *Explore* by having children count off to music similar to how a marching band counts off during a parade. Have children march in place while counting "1, 2, 3, 4, 1, 2, 3, 4, …." Ask children if they recognize the pattern. Invite volunteers to extend the pattern. Challenge children to identify a pattern in the marching (each time the number 1 or 3 is said, the right foot touches the ground, and each time the number 2 or 4 is said, the left foot touches the ground).

Lesson 4: Make and Extend a Pattern

Focus Note 1.4

Curriculum expectation: Represent a given repeating pattern in a variety of ways (e.g., pictures, actions, colours, sounds, numbers, letters).

Student Materials: Line Master 11: Representing Repeating Patterns

Curriculum Focus

Your curriculum requires children to represent repeating patterns in different ways.

Draw a simple shape pattern on the board, such as square, circle, square, circle, square, circle. Model how to represent the pattern using colours, letters, and numbers. For example, shade in the squares with red chalk and the circles with yellow chalk; write A, B, A, B, A, B below the pattern; and write 1, 2, 1, 2, 1, 2 below the pattern. Invite children to suggest other ways to colour, letter, or number the pattern.

Have children complete Line Master 11: Representing Repeating Patterns.

Answers to Line Master 11:

1. Sample colours: red, green, blue, red, green, blue

2. Sample letters: A B A B A B

3. Sample numbers: 1 2 3 1 2 3

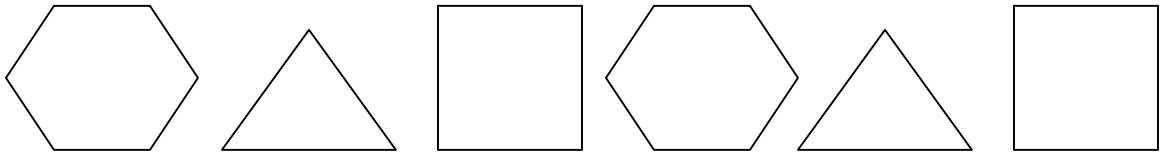
4. Sample drawings: house, house, car, car, house, house

Name: _____ Date: _____

Line Master 11

Representing Repeating Patterns

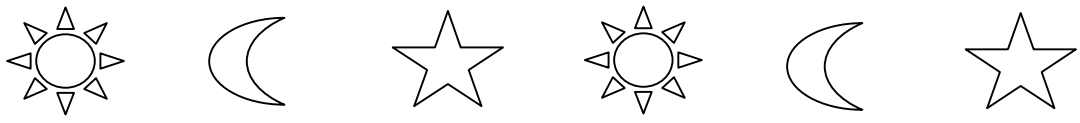
1. Use colours to show the pattern.



2. Use letters to show the pattern.

___ ___ ___ ___ ___ ___

3. Use numbers to show the pattern.



___ ___ ___ ___ ___ ___

4. Draw pictures to show the pattern.

A A B B A A

Unit 2 Number Relationships

Lesson	Curriculum Coverage	Line Masters and Materials
Lesson 1: Count to Ten	Required	
Lesson 2: Using a Calculator	Required	
Lesson 3: Number Search	Required	
Lesson 4: Number Arrangements	Required	
Lesson 5: One and Two More, One and Two Less	Required	
Lesson 6: Fantastic Five	Required	
Lesson 7: Terrific Ten	Required	
Lesson 8: Represent Numbers 10 to 20	Required: see Focus Note 2.8	small objects such as counters, potato or small object
Lesson 9: Estimate Numbers	Required	
Lesson 10: Strategies Tool Kit	Required	
Lesson 11: Show What You Know	Required	

Lesson 8: Represent Numbers 10 to 20

Focus Note 2.8

Curriculum expectations: Count backwards by 1's from 20 and any number less than 20, with and without the use of concrete materials and number lines; count backwards from 20 by 2's and 5's, using a variety of tools.

Curriculum Focus

Your curriculum requires children to count backwards from 20 by 1s, 2s and 5s. It also requires children to create sets of objects that have more than, less than, or the same number of objects in a given set.

Use the Activity Bank activities below to cover these curriculum requirements.

Human Number Line

- Invite five children to the front of the class. Have them stand side by side.
- Assign each child a number from 1 to 5. Starting with the child who is "1", have each child say their number as you point to them.
- Then start with the child who is "5". Work backwards and have each child say their number as you point to them.
- Invite five more children to become part of the number line.
  Assign them the numbers 6 to 10.
- Repeat the activity with 10, 15 and 20 children in the line.

Forwards and Backwards

Materials: 10 counters

Have children work in partners.

- Have children count the 10 counters out loud, taking turns with their partner.
- Then have students count their counters backwards.
- Have children count backwards by 2s. They should remove two counters with each count and tell how many are left.
- Have children count backwards by 5s. They should remove five counters with each count and tell how many are left.
- Children repeat the activity with 20 counters.

Hot Numbers!

Materials: potato or small object

Have children sit in a circle.

- Tell children they are going to play a version of the game "Hot Potato."
- Call out a number between 2 and 20.
- The potato is handed around the circle while each child calls out a number one less than the previous number that was called out. For example, if the start number is 17, the first child calls out "16", the next, "15", and the next, "14", and so on.
- If a child calls out the incorrect number or the count reaches zero, start again.
- Repeat the activity. Have children count backwards by 1s, 2s, and 5s.

Unit 3 Time, Temperature, and Money

Lesson	Curriculum Coverage	Line Masters and Materials
Lesson 1: Ordering Events	Required	
Lesson 2: Our Week	Required	
Lesson 3: Estimate and Compare Time	Required	
Lesson 4: Time to the Hour	Required: see Focus Note 3.4	Line Master 12
Lesson 5: Name and Sort Coins	Required	
Lesson 6: Making Money Amounts	Required	
Lesson 7: Strategies Tool Kit	Required	
Lesson 8: Show What You Know	Required	

Focus Note 3.4

Curriculum expectation: Read demonstration digital and analogue clocks, and use them to identify benchmark times (e.g., times for breakfast, lunch, dinner; the start and end of school; bedtime) and to tell and write time to the hour and half-hour in everyday settings.

Student Materials: Line Master 12: More Time to the Hour

Curriculum Focus

Your curriculum requires children to read and identify times on digital and analogue clocks.

Have students complete Line Master 12: More Time to the Hour.

Answers to Line Master 12:

1. 9 o'clock; 11 o'clock

2. 2:00; 8:00

3. Sample answers: eat breakfast; silent reading; eat dinner

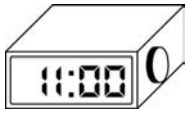
Name: _____ Date: _____

Line Master 12

More Time to the Hour

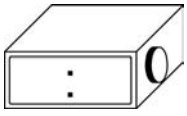
1. Write each time.

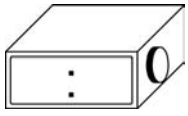
_____



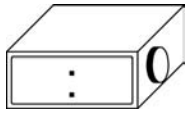
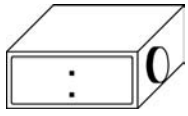
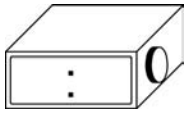
_____

2. Show each time on a digital clock.





3. Write each time on a digital clock.
Draw a picture to show what you do at each time.

7:00 in the morning		
1:00 in the afternoon		
6:00 in the evening		

Unit 4 Addition and Subtraction to 12

Lesson	Curriculum Coverage	Line Masters and Materials
Lesson 1: Part-Part-Whole (Combining)	Required	
Lesson 2: Addition Stories	Required	
Lesson 3: Strategies Tool Kit	Required	
Lesson 4: Part-Part-Whole (Missing Part)	Required	
Lesson 5: Subtraction Stories	Required	
Lesson 6: Combining and Separating	Required	
Lesson 7: Show What You Know	Required	

Unit 5 Data Management and Probability

Lesson	Curriculum Coverage	Line Masters and Materials
Lesson 1: Build and Interpret Concrete Graphs	Required	
Lesson 2: Build and Interpret Picture Graphs	Required	
Lesson 3: Strategies Tool Kit	Required	
Lesson 4: Conduct a Survey	Required	
Lesson 5: Probability	Required	
Lesson 6: Show What You Know	Required	

Unit 6 3-D and 2-D Geometry

Lesson	Curriculum Coverage	Line Masters and Materials
Lesson 1: Build 3-D Structures	Required	
Lesson 2: Attributes of 3-D Solids	Required	
Lesson 3: Create a Picture	Required	
Lesson 4: Spatial Awareness	Required: see Focus Note 6.4	Classroom map with student desks, doors, and windows included
Lesson 5: Strategies Tool Kit	Required	
Lesson 6: Show What You Know	Required	

Focus Note 6.4

Curriculum expectation: Describe the relative locations of objects on concrete maps created in the classroom.

Curriculum Focus

Your curriculum requires children to describe the relative locations of objects on maps.

Use the Activity Bank activity below to cover this curriculum requirement.

Where's the Teacher?

Materials: Classroom map with student desks, doors, and windows included

- Have children familiarize themselves with the map. Point out "landmarks" and have children locate and label their desks on the map with their names.
- Ask children to find the location of the teacher's desk and draw a box at the location on the map.
- Stand in the front of the classroom.
- Instruct children to point to your location on the map.
- Move slowly to a window or door. Have children trace your steps on the map with their fingers as you move.
- Encourage children to use spatial language such as "to the left of the window", or "in front of the door."
- Repeat any of the above activities using different classroom locations.

Unit 7 Number Patterns

Lesson	Curriculum Coverage	Line Masters and Materials
Lesson 1: Count to 50	Required	
Lesson 2: Counting Collections	Required: see Focus Note 7.2	number cards (0 to 20), small objects such as paperclips, paper plates, counters
Lesson 3: Counting Patterns	Required	
Lesson 4: Skip Counting on the Calculator	Required	
Lesson 5 Strategies Tool Kit	Required	
Lesson 6: Doubles	Optional, but recommended	
Lesson 7: Addition and Subtraction to 20	Required	
Lesson 8: Posing and Solving Story Problems	Required	
Lesson 9: Show What You Know	Required	

Lesson 6: Although some of this material is not directly required by the Grade 1 curriculum, it can be used to connect to new material in Lessons 8 and 9.

Lesson 2: Counting Collections

Focus Note 7.2

Curriculum expectation: Create a set in which the number of objects is greater than, less than, or equal to the number of objects in a given set.

Curriculum Focus

Your curriculum requires children to create sets of objects based on the number of objects in a given set.

Use the Activity Bank activities below to cover this curriculum requirement.

Show Me More or Less

Materials: paper plates, 10 counters

Have children work in partners.

- Have one child put 1 to 10 counters on a paper plate.
  The child shows the plate of counters to her partner and says, "Show me more" or "Show me less."
- The other child counts the counters and then places more counters on the plate or removes counters from the plate, as instructed.
- Partners discuss their choices and write a sentence about what they did. For example, "Seven is more than two."
- Partners switch roles, and repeat the activity.

Objects All Around

Materials: number cards (0 to 20), small objects such as paperclips

Have children work in partners.

- Have each partner select a number card.
- One child draws or gathers a set of objects that has a greater number of objects in it than the number on the card.
- The other child draws or gathers a set of objects that has a lesser number of objects in it than the number on the card.
- Have children verify that each other's sets are correct.

Unit 8 Linear Measurement and Area

Lesson	Curriculum Coverage	Line Masters and Materials
Lesson 1: Comparing Lengths	Required	
Lesson 2: Estimating Lengths	Required	
Lesson 3: Ordering Lengths	Required	
Lesson 4: Choosing a Unit	Required: see Focus Note 8.4	Line Master 13 metre sticks
Lesson 5: Strategies Tool Kit	Required	
Lesson 6: Estimating and Comparing Areas	Required	
Lesson 7: Show What You Know	Required	

Lesson 4: Choosing a Unit

Focus Note 8.4

Curriculum expectation: Use the metre as a benchmark for measuring length, and compare the metre with non-standard units.

Student Materials: Line Master 13: Use Metres to Measure, metre sticks

Curriculum Focus

Your curriculum requires children to apply and understand the length of a metre.

Have children complete Line Master 13: Use Metres to Measure.

Answers to Line Master 13:

Answers will vary. Invite children to share their answers with the class.

Name: _____ Date: _____

Line Master 13

Use Metres to Measure

1. Complete the chart.

Objects	Longer than 2 metres?		Estimate	Measure
height of door	yes	no		
width of door	yes	no		
length of desk	yes	no		
height of desk	yes	no		
your height	yes	no		
your teacher's height	yes	no		

2. Name 4 objects that are about one metre long.

_____

_____

_____

_____

Unit 9 2-D Geometry and Applications

Lesson	Curriculum Coverage	Line Masters and Materials
Lesson 1: Identify Attributes of 2-D Figures	Required	
Lesson 2: Sorting 2-D Figures	Required	
Lesson 3: Strategies Tool Kit	Required	
Lesson 4: Comparing Figures	Required	
Lesson 5: Symmetry	Required	
Lesson 6: Fractions (Halves)	Required	
Lesson 7: Time to the Half-Hour	Required: see Focus Note 9.7	Line Master 18
Lesson 8: Show What You Know	Required	

Lesson 7: Time to the Half-Hour

Focus Note 9.7

Curriculum expectation: Read demonstration digital and analogue clocks, and use them to identify benchmark times (e.g., times for breakfast, lunch, dinner; the start and end of school; bedtime) and to tell and write time to the hour and half hour in everyday settings.

Student Materials: Line Master 18: Digital Clocks

Curriculum Focus

Your curriculum requires children to read and identify times on both digital and analogue clocks.

Have children complete Line Master 18: Digital Clocks.

Answers to Line Master 18:

1. 3:30; 7:30; 10:30; 1:30; 8:30; 4:30; 2:30; 5:30; 11:30

2. 6:30; 2:30; 3:30; 12:30

Name: _____ Date: _____

Line Master 18

Digital Clocks

1. Use the digital clocks to show each time on *Student page 217*.

2. Show each time on the digital clock.

30 minutes past 6 o'clock

30 minutes past 2 o'clock

30 minutes before 4 o'clock

30 minutes before 1 o'clock

Unit 10 Place Value and Number Applications

Lesson	Curriculum Coverage	Line Masters and Materials
Lesson 1: The 100-Chart	Required	
Lesson 2: Counting to 100	Required	
Lesson 3: Groups of 10's	Required	
Lesson 4: 10's and 1's	Optional	
Lesson 5: Adding and Subtracting	Required	
Lesson 6: Strategies Tool Kit	Required	
Lesson 7: Show What You Know	Required	

Unit 11 Mass and Capacity

Lesson	Curriculum Coverage	Line Masters and Materials
Lesson 1: Comparing Capacity	Required	
Lesson 2: Estimating Capacity	Required	
Lesson 3: Strategies Tool Kit	Required	
Lesson 4: Comparing Mass	Required: see Focus Note 11.4	pan balances, small objects to weigh
Lesson 5: Estimating Mass	Required	
Lesson 6: Show What You Know	Required	

Lesson 4: Comparing Mass

Focus Note 11.4

Curriculum expectations: Demonstrate examples of equality, through investigation, using a "balance" model; determine, through investigation using a "balance" model and whole numbers to 10, the number of identical objects that must be added or subtracted to establish equality.

Curriculum Focus

Your curriculum requires children to demonstrate examples of equality using a "balance" model. It also requires children to add or subtract identical objects to establish equality.

Use the Activity Bank activity below to cover these curriculum requirements.

Weighing the Same

Materials: pan balances, small objects to weigh

Have children collect items, such as acorns, leaves, stones, or use various small objects from the classroom.

- Have children work in partners to predict which items have equal mass.
- Have children use a pan balance to check their predictions.
- Ask children to fill in the following statement:
  _____ has the same mass as _____.
  I know this because _____.
- Have children place an object on the left pan of the balance. Children predict how many objects of a lesser mass could be placed on the right pan of the balance to make the scale balance.
- Have children place the objects with the lesser mass, one at a time, on the right pan of the balance. They should adjust their predictions with each placement.

Correlation of Ontario Mathematics 2005 Curriculum to *Addison Wesley Math Makes Sense 1*

Mathematical Process Expectations

The mathematical process expectations are to be integrated into student learning associated with all the strands.

Throughout Grade 1, students will:

Mathematical Process Expectations	***Addison Wesley Mathematics Makes Sense Grade 1*, Correlation:**
Problem Solving apply developing problem-solving strategies as they pose and solve problems and conduct investigations, to help deepen their mathematical understanding;	*Throughout the program*. In addition to the ongoing developmental flow, supporting program features include: **Mathematics Centres**; **Activity Bank** suggestions; **Explore** activities; **Strategies Tool Kits**; **Show What You Know**; **Cross-Strand Investigations**.
Reasoning and Proving apply developing reasoning skills (e.g., pattern recognition, classification) to make and investigate conjectures (e.g., through discussion with others);	*Throughout the program*. In addition to the ongoing developmental flow, supporting program features include: **Explore** activities; **Show & Share** discussions; **Connect** summaries to model consolidation of concepts; **Show What You Know**; **Cross-Strand Investigations**.
Reflecting demonstrate that they are reflecting on and monitoring their thinking to help clarify their understanding as they complete an investigation or solve a problem (e.g., by explaining to others why they think their solution is correct);	*Throughout the program*. In addition to the ongoing developmental flow, supporting program features include: **Show & Share** discussions in each **Explore**; selected **Practice** suggestions; journaling opportunities in the Student Book; **Connect** summaries to model the process of reflection during problem solving.

Throughout Grade 1, students will:

Mathematical Process Expectations	***Addison Wesley Mathematics Makes Sense Grade 1*, Correlation:**
Selecting Tools and Computational Strategies select and use a variety of concrete, visual, and electronic learning tools and appropriate computational strategies to investigate mathematical ideas and to solve problems;	*Throughout the program*. In addition to the ongoing developmental flow, supporting program features include: **Explore** activities; **Practice** suggestions; **Numbers Every Day** activities; **Technology** centers and activities; **Technology** lessons; **Show What You Know**; **Cross-Strand Investigations**.
Connecting make connections among simple mathematical concepts and procedures, and relate mathematical ideas to situations drawn from everyday contexts;	*Throughout the program*. In addition to the ongoing developmental flow, supporting program features include: **Literacy Links**; **From the Library**; **Cross-Curricular Connections**; **Show What You Know**; **Cross-Strand Investigations**; **Explore** activities; **Math Centres; Activity Banks; Math at Home** pages in the Student Book.
Representing create basic representations of simple mathematical ideas (e.g., using concrete materials, physical actions, such as hopping or clapping; pictures; numbers; diagrams; invented symbols), make connections among them, and apply them to solve problems;	*Throughout the program*. In addition to the ongoing developmental flow, supporting program features include: **Explore** activities; **Show & Share** discussions; **Mathematics Centres; Activity Banks**.
Communicating communicate mathematical thinking orally, visually, and in writing, using everyday language, a developing mathematical vocabulary, and a variety of representations.	*Throughout the program*. In addition to the ongoing developmental flow, supporting program features include: **Math Word Wall** suggestions; **Show & Share** discussions in each **Explore** activity; **From the Library** and **Literacy Links**; **Strategies Tool Kit** lessons; **Cross-Strand Investigations** with **Take-Home Stories**.

Number Sense and Numeration

Overall Expectations

By the end of Grade 1, students will:

- read, represent, compare, and order whole numbers to 50, and use concrete materials to investigate fractions and money amounts;
- demonstrate an understanding of magnitude by counting forward to 100 and backwards from 20;
- solve problems involving the addition and subtraction of single-digit whole numbers, using a variety of strategies.

Students will:

Specific Expectations	***Addison Wesley Mathematics Makes Sense Grade 1*, Lessons:**
Quantity Relationships represent, compare, and order whole numbers to 50, using a variety of tools (e.g., connecting cubes, ten frames, base ten materials, number lines, hundreds charts) and contexts (e.g., real-life experiences, number stories);	Unit 2 L1, L3, L4, L5, L6, L7, L8 (to 20) Unit 7 L1, L2, L3 (to 50) Unit 10 L1, L2, L3 (to 100)
read and print in words whole numbers to ten, using meaningful contexts (e.g., story-books, posters);	Unit 2 L1
demonstrate, using concrete materials, the concept of conservation of number (e.g., 5 counters represent the number 5, regardless whether they are close together or far apart);	Unit 2 L3, L4, L8
relate numbers to the anchors of 5 and 10 (e.g., 7 is 2 more than 5 and 3 less than 10);	Unit 2 L5, L6, L7, L9 Unit 7 L2, L3 Unit 10 L2, L3
identify and describe various coins (i.e., penny, nickel, dime, quarter, $1 coin, $2 coin), using coin manipulatives or drawings, and state their value (e.g., the value of a penny is one cent; the value of a toonie is two dollars);	Unit 3 L5
represent money amounts to 20¢, through investigation using coin manipulatives;	Unit 3 L6

Specific Expectations	***Addison Wesley Mathematics Makes Sense Grade 1*, Lessons:**
estimate the number of objects in a set, and check by counting (e.g. "I guessed that there were 20 cubes in the pile. I counted them and there were only 17 cubes. 17 is close to 20.");	Unit 2 L9 Unit 7 L1, L2 Unit 10 Launch
compose and decompose numbers up to 20 in a variety of ways, using concrete materials (e.g., 7 can be decomposed using connecting cubes into 6 and 1, or 5 and 2, or 4 and 3);	Unit 2 L4, L5, L6, L7, L8, L10 Unit 4 L1, L2, L3 Unit 7 L7 Unit 10 L5
divide whole objects into parts and identify and describe, through investigation, equal-sized parts of the whole, using fractional names (e.g., halves; fourths or quarters);	Unit 9 L6
Counting demonstrate, using concrete materials, the concept of one-to-one correspondence between number and objects when counting;	Unit 2 L1, L2, L4, L6, L7, L8, L9 Unit 4 L1, L2 Unit 7 L1, L2 Unit 10 L2, L3
count forward by 1's, 2's, 5's, and 10's to 100, using a variety of tools and strategies (e.g., move with steps; skip count on a number line; place counters on a hundreds chart; connect cubes to show equal groups; count groups of pennies, nickels, or dimes);	Unit 7 L1, L2, L3, L4 Unit 10 L1, L2, L3
count backwards by 1's from 20 and any number less than 20 (e.g., count backwards from 18 to 11), with and without the use of concrete materials and number lines;	Unit 2 L1, L8 with supporting TG note Unit 4 L5 Activity "Singing Subtraction"
count backwards from 20 by 2's and 5's, using a variety of tools (e.g., number lines, hundreds charts);	Unit 2 L1, L8 with supporting TG note
use ordinal numbers to thirty-first in meaningful contexts (e.g., identify the days of the month on a calendar);	Unit 3 L2 Building a Math Community (TG module), pp 22, 23
Operational Sense solve a variety of problems involving the addition and subtraction of whole numbers to 20, using concrete materials and drawings (e.g., pictures, number lines)	Unit 2 L4, L5 Unit 4 L1, L2, L3, L4, L5, L6 Unit 7 L7, L8 Unit 10 L5

Specific Expectations	*Addison Wesley Mathematics Makes Sense Grade 1,* **Lessons:**
solve problems involving the addition and subtraction of single-digit whole numbers; using a variety of mental strategies (e.g., one more than, one less than, counting on, counting back, doubles);	Unit 2 L4, L5 Unit 4 L1, L2, L3, L4, L5, L6 Unit 7 L7, L8 Unit 10 L5
add and subtract money amounts to 10¢, using coin manipulatives and drawings.	Unit 3 L6, L7

Measurement

Overall Expectations

By the end of Grade 1, students will:

- estimate, measure, and describe length, area, mass, capacity, time, and temperature, using non-standard units of the same size;
- compare, describe, and order objects, using attributes measured in non-standard units.

Students will:

Specific Expectations	***Addison Wesley Mathematics Makes Sense Grade 1*, Lessons:**
Attributes, Units, and Measurement Sense demonstrate an understanding of the use of non-standard units of the same size (e.g., straws, index cards) for measuring;	Unit 8 L1, L2, L3, L4, L6 Unit 11 L1, L2, L4, L5
estimate, measure (i.e., by placing non-standard units repeatedly, without overlaps or gaps), and record lengths, heights, and distances (e.g., a book is about 10 paper clips wide; a pencil is about 3 toothpicks long);	Unit 8 L1, L2, L3, L4, L6
construct, using a variety of strategies, tools for measuring lengths, heights, and distances in non-standard units (e.g., footprints on cash register tape or on connecting cubes);	Unit 8 L1, L2 (Activity Bank)
estimate, measure (i.e., by minimizing overlaps and gaps), and describe area, through investigation using non-standard units (e.g., "It took about 15 index cards to cover my desk, with only a little bit of space left over.");	Unit 8 L6
estimate, measure, and describe the capacity and/or mass of an object, through investigation using non-standard units (e.g., "My journal has the same mass as 13 pencils." "The juice can has the same capacity as 4 pop cans.");	Unit 11 L1, L2, L3, L4, L5
estimate, measure, and describe the passage of time, through investigation using non-standard units (e.g., number of sleeps; number of claps; number of flips of a sand timer);	Unit 3 L2, L3
read demonstration digital and analogue clocks, and use them to identify benchmark times (e.g., times for breakfast, lunch, dinner; the start and end of school; bedtime) and to tell and write time to the hour and half hour in everyday settings;	Unit 3 L4 with supporting TG note Unit 9 L7 with supporting TG note
name the months of the year in order, and read the date on a calendar;	Building a Math Community (TG module), pp 22, 23

Specific Expectations	*Addison Wesley Mathematics Makes Sense Grade 1*, Lessons:
relate temperature to experiences of the seasons (e.g., "In winter, we can skate because it's cold enough for there to be ice.");	Unit 3 Launch, L1
Measurement Relationships compare two or three objects using measurable attributes (e.g., length, height, width, area, temperature, mass, capacity), and describe the objects using relative terms (e.g., *taller, heavier, faster, bigger, warmer*; "If I put an eraser, a pencil, and a metre stick beside each other, I can see that the eraser is shortest and the metre stick is longest.");	Unit 8 L1, L3, L6 Unit 11 L1, L4 Unit 3 L1
compare and order objects by their linear measurements, using the same non-standard unit;	Unit 8 L1, L3, L5
use the metre as a benchmark for measuring length, and compare the metre with non-standard units;	Unit 8 L4 with supporting TG note
describe, through investigation using concrete materials, the relationship between the size of a unit and the number of units needed to measure length.	Unit 8 L4

Geometry and Spatial Sense

Overall Expectations

By the end of Grade 1, students will:

- identify common two-dimensional shapes and three-dimensional figures and sort and classify them by their attributes;*
- compose and decompose common two-dimensional shapes and three-dimensional figures;
- describe the relative locations of objects using positional language.

Students will:

Specific Expectations	***Addison Wesley Mathematics Makes Sense Grade 1*, Lessons:**
Geometric Properties identify and describe common two-dimensional shapes (e.g., circles, triangles, rectangles, squares) and sort and classify them by their attributes (e.g., colour; size; texture; number of sides), using concrete materials and pictorial representations (e.g., "I put all the triangles in one group. Some are long and skinny, and some are short and fat, but they all have three sides.");	Unit 1 L1 Unit 9 L1, L2, L3
trace and identify the two-dimensional faces of three-dimensional figures, using concrete models (e.g., "I can see squares on the cube.");	Unit 6 L3 Activity "Painted Faces"
identify and describe common three-dimensional figures (e.g., cubes, cones, cylinders, spheres, rectangular prisms) and sort and classify them by their attributes (e.g., colour; size; texture; number and shape of faces), using concrete materials and pictorial representations (e.g., "I put the cones and the cylinders in the same group because they all have circles on them.");	Unit 6 L1, L2
describe similarities and differences between an everyday object and a three-dimensional figure (e.g., "A water bottle looks like a cylinder, except the bottle gets thinner at the top.");	Unit 6 L1, L2
locate shapes in the environment that have symmetry, and describe the symmetry;	Unit 9 L5

* For the purposes of student learning in Grade 1, "attributes" refers to the various characteristics of two-dimensional shapes and three-dimensional figures, including geometric properties. (See glossary entries for "attribute" and "property (geometric)"." Students learn to distinguish attributes that are geometric properties from attributes that are not geometric properties in Grade 2.

Specific Expectations	***Addison Wesley Mathematics Makes Sense Grade 1*, Lessons:**
Geometric Relationships compose patterns, pictures, and designs, using common two-dimensional shapes;	Unit 6 L3
identify and describe shapes within other shapes (e.g., shapes within a geometric design);	Unit 6 L3, L4 Unit 9 Launch, L1, L4
build three-dimensional structures using concrete materials, and describe the two-dimensional shapes the structures contain;	Unit 6 L1, L2
cover outline puzzles with two-dimensional shapes (e.g., pattern blocks, tangrams);	Unit 9 L4, Student Book p. 211
Location and Movement describe the relative locations of objects or people using positional language (e.g., *over, under, above, below, in front of, behind, inside, outside, beside, between, along*);	Unit 6 L4
describe the relative locations of objects on concrete maps created in the classroom;	Unit 6 L4 with supporting TG note
create symmetrical designs and pictures, using concrete materials (e.g., pattern blocks, connecting cubes, paper for folding), and describe the relative locations of the parts.	Unit 9 L5 Unit 9 Centres

Patterning and Algebra

Overall Expectations

By the end of Grade 1, students will:

- identify, describe, extend, and create repeating patterns;
- demonstrate an understanding of the concept of equality, using concrete materials and addition and subtraction to 10.

Students will:

Specific Expectations	***Addison Wesley Mathematics Makes Sense Grade 1*, Lessons:**
Patterns and Relationships identify, describe, and extend, through investigation, geometric repeating patterns involving one attribute (e.g., colour size, shape, thickness, orientation);	Unit 1 L3, L4
identify and extend, through investigation, numeric repeating patterns (e.g., 1,2, 3, 1, 2, 3, 1, 2, 3, …);	Unit 1 L3 with supporting TG note
describe numeric repeating patterns in a hundreds chart;	Unit 10 L1
identify a rule for a repeating pattern (e.g., "We're lining up boy, girl, boy, girl, boy, girl.");	Unit 1 L3, L4
create a repeating pattern involving one attribute (e.g., colour, size, shape, sound);	Unit 1 L4
represent a given repeating pattern in a variety of ways (e.g., pictures, actions, colours, sounds, numbers, letters);	Unit 1 L4 with supporting TG note
Expressions and Equality create a set in which the number of objects is greater than, less than, or equal to the number of objects in a given set;	Unit 2 L1 Unit 7 L2 with supporting TG note
demonstrate examples of equality, through investigation, using a "balance" model;	Unit 11 L4 with supporting TG note
determine, through investigation using a "balance" model and whole numbers to 10, the number of identical objects that must be added or subtracted to establish equality.	Unit 11 L4 with supporting TG note

Data Management and Probability

Overall Expectations

By the end of Grade 1, students will:

- collect and organize categorical primary data and display the data using concrete graphs and pictographs, without regard to the order of labels on the horizontal axis;
- read and describe primary data presented in concrete graphs and pictographs;
- describe the likelihood that everyday events will happen.

Students will:

Specific Expectations	***Addison Wesley Mathematics Makes Sense Grade 1*, Lessons:**
Collection and Organization of Data demonstrate an ability to organize objects into categories by sorting and classifying objects using one attribute (e.g., colour, size), and by describing informal sorting experiences (e.g., helping to put away groceries);	Unit 1 L1, L2 Unit 6 L2 Unit 9 L1, L2
collect and organize primary data (e.g., data collected by the class) that is categorical (i.e., that can be organized into categories based on qualities such as colour or hobby), and display the data using one-to-one correspondence, prepared templates of concrete graphs and pictographs (with titles and labels), and a variety of recording methods (e.g., arranging objects, placing stickers, drawing pictures, making tally marks);	Unit 5 L1, L2, L3
Data Relationships read primary data presented in concrete graphs and pictographs, and describe the data using comparative language (e.g., more students chose summer than winter as their single favourite season);	Unit 5 L1, L2
pose and answer questions about collected data;	Unit 5 L4
Probability describe the likelihood that everyday events will occur, using mathematical language (i.e., *impossible, unlikely, less likely, more likely, certain*) (e.g., "It's unlikely that I will win the contest shown on the cereal box.").	Unit 5 L5

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